connected to the keyboard housing operable for extending and adjusting the slope of the keyboard housing relative to the underlying main computer body.

In an embodiment, the keyboard housing defines an embedded compartment in the main computer body and the front edge of the keyboard housing is pivotally connected to the main computer body, allowing for the back edge of the keyboard to be raised while the front edge pivots about an axis or rotation. The positioning supports include legs, a flap, thumbscrews, rods, or any other suitable mechanism that can support the slope and weight of the keyboard while in an elevated position. The positioning support provides for the slope adjustment of the keyboard housing in discrete steps and continuous adjustment, allowing the user options in keyboard slope angles.

The present invention provides for an ergonomic advancement while the computer is being used, and compact and easy to retract ergonomics that do not interfere with the size or portability of the laptop computer. The user has the option of using the ergonomic advancement or typing on the keyboard in a traditional non-ergonomic position.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of one embodiment of the present invention illustrating an ergonomic keyboard in a raised position, showing collapsible controllably extendable supportive members, with the front edge of the keyboard pivotally and functionally connected to the main computer base;

Figure 2 is a side perspective view of the device of Figure 1 illustrating the movement of one embodiment of two positioning supports;

Figure 3 is a perspective view illustrating the ergonomic keyboard of Figure 1 in a retracted position and the display folded onto the main computer base;

Figure 4 is a rear perspective view of a keyboard housing removed from the main computer base in order to illustrate one embodiment of thumbscrew positioning supports; and

Figure 5 is a rear perspective view of a keyboard housing removed from the main computer base in order to illustrate one embodiment of a flap positioning support.

In an alternative embodiment, the positioning support 16 includes a spring mechanism. In such an embodiment, the keyboard housing 14 is raised up as described above. The positioning support 16 is then extended providing for a desired slope of the keyboard 14. The spring mechanism provides a way of retracting the positioning support 16. A user simply pulls up slightly on the keyboard housing 14 and the support 16 automatically retracts, providing an easy way of returning the keyboard 14 to its flush position. In a further embodiment, the spring mechanism positioning support 16 is retracted using a switch, button, lever or other spring triggering mechanism.

In one embodiment, the ergonomic keyboard 14 of the present invention is a standard feature included in the manufacture of a new laptop computer (1, FIG. 1). In an alternative embodiment, the keyboard 14 is a retrofit item allowing for the replacement of an existing non-ergonomic keyboard with the ergonomic keyboard 14 of the present invention. If a keyboard in a currently existing laptop computer breaks, replacements are available. The present invention provides for a process in which a retrofit ergonomic keyboard 14 is installed in a laptop computer 1 in order to replace an existing, non-ergonomic keyboard. The process comprises removing the non-ergonomic keyboard from the main computer body, attaching the new retrofit keyboard to the main computer body operationally, and at the pivot point 18. The retrofit keyboard 14 includes a keyboard housing 14 with one or more slope adjustment positioning supports 16 and the necessary components for functionally connecting the keyboard to the main computer base (10, FIG. 1), such as a front edge pivot point (18, FIG. 2) attachment. The connection components may include some sort of wire, wireless, or infra-red interface that operationally attaches the keyboard 14 to the main computer base 10. The retrofit keyboard 14 kit may additionally include a cover that will protect the hardware within the main computer base 10 when the ergonomic keyboard 14 is installed.

In alternative embodiments, newly manufactured, as well as retrofit ergonomic keyboards 14, are not limited to use in laptop computers. Any device containing a keyboard may include the apparatus of the present invention, such as personal digital assistants, pocket PCs, and other portable handheld computers.

Apparatus and processes providing for ergonomics in portable computers and other electronic devices have been described herein. These, and other variations, which